

RIVER STAGES AND FLOODS FOR JUNE 1949

The most destructive flooding during June was due to flash floods in the Potomac and Arkansas River Basins and in the tributaries of the Upper Trinity. Several lives were lost and property, crop, and road damage was high. Severe flooding occurred on the Little and Upper Big Blue Rivers and on local reaches of the Solomon near Beloit, Kans. There was major flooding along the upper Arkansas in Kansas and record stages were reached at several points.

Atlantic Slope drainage.—Precipitation in the New England States was generally below normal except in local areas where heavy thundershowers occurred. It was an unusually dry month and was record breaking in some sections. No records for low stages, however, were established even though the streams remained below normal during most of the month. It was also extremely dry in the Delaware Basin. It was the driest June of record at Philadelphia, Pa., and the driest calendar month of record at Trenton, N. J.

Severe flash floods occurred in the South Branch of the Potomac in West Virginia, and in the North River, a tributary of the South Fork of the Shenandoah, in Virginia, during the night of the 17th and early morning of the 18th. The areas hardest hit were the Petersburg-Moorefield area on the South Branch and the Stokesville-Bridgewater, Va., area on the North River. The flood in the South Branch exceeded the great flood of March 1936 in the Petersburg-Moorefield area. At Springfield, W. Va., the crest of 29.8 feet was the highest stage reached at this point since March 1936 when a stage of 34.2 feet was reached. The crests flattened out as they moved downstream and only minor flooding occurred along the main stem of the Potomac at Harpers Ferry, W. Va., and near Washington, D. C. (Leiter gage). The highest stage reached in tidewater in the Washington area was 5.5 feet, 1.5 feet below flood stage at the Wisconsin Avenue gage on the 20th at high tide.

These flash floods were due to heavy to excessive rains that occurred in a relatively short period. At Brushy Run, W. Va., 7.84 inches of rain was measured in the 12-hour period ending at 7 p. m. on the 17th. During the 24-hour period ending the following morning 12.02 inches of rain had fallen at that point and 9.18 inches at Petersburg, W. Va. During the 4-day period from the 16th–19th, the rainfall at these two places totaled 14.26 and 12.66 inches, respectively. At Big Meadows, Va., 13.52 inches occurred during the same period. The rainfall over the South Branch during this period averaged 5.2 inches, over the Shenandoah, 4.6 inches, and over the entire Potomac basin, 3.6 inches.

At least 8 persons lost their lives in these flash floods with a score reported as missing. About 2,400 residents were driven from their homes. Several bridges and hundreds of homes and other buildings were damaged or destroyed. Several thousand head of cattle, sheep, and hogs were lost.

Heavy to excessive showers on the 29th caused flooding on the Roanoke and Neuse Rivers in Virginia and North Carolina. At Alta Vista, Va., the Roanoke rose to 11 feet above flood stage on the 30th. At Smithfield, N. C., the Neuse rose 11 feet during the night to 1.5 feet above flood stage. Record-breaking rainfall amounts occurred at Smithfield and Scotland Neck, 5.1 and 5.55 inches respectively, with the former receiving 4.69 inches in 75 minutes.

East Gulf of Mexico drainage.—Slight flooding occurred on the Pearl River at Pearl River, La., during the last 3

days of June due to excessive rain showers on the afternoons of the 23d and 24th.

Upper Mississippi Basin.—Light flooding occurred on the lower Des Moines at Eddyville and Ottumwa, Iowa, and on the Middle River at Indianola due to heavy local rains on the 24th and 25th. Precipitation was below normal during the first half of June, but scattered showers during the following 10 days supplied adequate soil moisture to cause slight rising trends on the lower Raccoon and on the Des Moines below the Raccoon before the heavy local rains occurred. No damage resulted from the flood as the only land affected was low-lying sub-marginal agricultural bottom land.

Ohio Basin.—Heavy rainfall (5 inches) along the Green and Barren Rivers on the 15th and 16th resulted in a minor flood on the former at Brownsville and Woodbury, Ky., and on the latter at Bowling Green, Ky.

Heavy rains on the mountain ridges of western North Carolina during the 72-hour period ending at 6 a. m. on the 17th caused severe headwater floods on several tributaries of the French Broad, Little Tennessee, Hiwassee and Nolichucky Rivers. The floods resulting from this storm caused severe crop and road damage but commercial, industrial, and residential damages were relatively light. The principal damage along the French Broad was confined to the reach above Asheville where flood waters inundated a considerable area of truck crops.

Excessive rainfall amounts on the upper reaches of the Little Tennessee River ranged from near 8.5 inches to about 4.5 inches at Bryson City and Franklin, N. C. Above Franklin the flood exceeded that of August 1940. Crop and road damages above this point were severe. On the Nantahala River, a headwater tributary of the Little Tennessee River, the flood above Rainbow Springs, N. C., was higher than any flood in the memory of the inhabitants. There was little damage on this reach due to lack of bottom land. On the Hiwassee River the flood was confined to the headwaters above Chatuga Dam. Portions of the Shorting Creek Basin had rainfall exceeding 10 inches. The flood on this creek was the most severe since shortly before 1900.

On the Pigeon River, a tributary of the French Broad, the rainfall was most intense over the East Fork, above Canton, N. C. The rainfall ranged from 6.7 inches in the lower areas up to 12.4 inches in the headwaters. Crop and road damages above Canton were severe.

On the Nolichucky River the flood was confined mainly to the two upper tributaries, the Cane and South Toe Rivers. Rainfall in this area ranged from about 12.8 inches on the highest ridges to 6 inches on the western limits of the basin. At Sioux, N. C., the Cane River was 2.2 feet below the flood of August 1940. At Cove River, N. C., it was about equal to the 1940 flood and at Riverside, N. C., it was greater. At Newdale, N. C., the South Toe was 3 feet under the August 1940 flood and in the headwaters it was about equal to it. Crop and road damages were heavy on the Cane River and somewhat less on the South Toe.

Missouri Basin.—Torrential rains on the 1st resulted in local flooding on the Elkhorn River at West Point, Nebr., from the 2d to the 4th. Damage from flood waters was confined mostly to railroad and highway embankments in the Hoskins-Norfolk-Stanton area on the 1st and to crop damage near West Point on the 3d and 4th.

Minor flooding occurred along Oak Creek in the vicinity of Raymond, Nebr., and along Salt Creek at Ashland, Nebr., due to heavy rain (1 to 2.5 inches) on the 13th.

No important damage resulted from the light overflows.

Severe flooding occurred along the Little Blue, Upper Big Blue and on local reaches of the Solomon near Beloit, Kans., during the month. Flood stages were exceeded by nearly 10 feet on the Solomon on two occasions, and on the Big Blue at Barnston, Nebr., with a slightly less overflow in Kansas at Blue Rapids. Minor overflows were recorded on the upper Republican in Nebraska, on the lower Solomon, the Delaware, and at Manhattan on the Kansas River. Heavy damage resulted from the flooding with the principal damage in the upper Little Blue Basin.

Flood stages were reached or exceeded at most points on the Missouri River at and below Rulo, Nebr., on the Grand at Chillicothe, Mo., and on several other smaller tributaries. The flooding was generally minor except along the Nemaha where heavy rains (4 to 6 inches) on the night of the 1st and 2d caused a rise of 24 feet at Falls City, Nebr. This stream overflowed three times in this area during June. A flash flood occurred on the Lamine river causing it to rise to 9 feet above bankfull stage at Clifton City, Mo., on the 7th for the 3d overflow in 7 days. This flash rise was followed by another flood on the night of the 10th. The Grand River rose 19 feet at Chillicothe, Mo., during the night of the 2d and 3d causing an overflow of 6 feet.

Arkansas Basin.—The Cimarron River at Perkins, Okla., overflowed slightly on two different occasions and minor overflows were also reported on Cow Creek in Kansas and on Big Cabin Creek in Oklahoma. There was major flooding along the upper Arkansas in Kansas and record stages were reached at Syracuse, Garden City, and Dodge City. This flood was similar to the one of April 1942. Heavy damages resulted from the severe flooding.

A flash flood occurred in the lower Arkansas Valley in the vicinity of Bristol, Lamar, and Holly, Colo., on the 4th due to torrential rains averaging nearly 7 inches. Damage in the valley to property and crops was high.

Another flash flood occurred on the afternoon of the 5th at Florence and Portland, Colo., following a cloudburst. A wall of water 10 feet above the flood stage roared into east Florence from Sand Creek which drains into Newlin Creek coal mining region to the south. It burst its banks at the Front Street bridge in south Florence and again at the point where Highway 50 crosses the creek near the Old Florence Continental Oil Refinery. The water caused heavy damage to buildings and homes in the Florence area. A short time later the highway was again closed when Hardscrabble Creek went on a rampage at Portland, a small town below Florence, putting the road beneath more than 4 feet of water. On Hollywood Flats the water was up to 7 feet deep, covering low buildings. Thirty-one homes were either swept away or upset, and homeless Portland residents were housed in an abandoned part of the cement plant.

Red Basin.—Scattered heavy showers (2.5 to 3 inches) over the extreme upper Sulphur Basin on the 13th and 14th resulted in light flooding at Hagansport, Tex. Minor flooding occurred on the Little River at Whitecliffs, Ark., from the 17th to the 19th due to the heavy rains (3 inches) on the 13th and 14th. Light flooding occurred on the Ouachita at Arkadelphia and Camden.

Atchafalaya Basin.—Light flooding occurred on the Atchafalaya at Morgan City, La., for almost 3 hours on the 25th due to tide and wind effects.

West Gulf of Mexico drainage.—Light flooding occurred in the Sabine River at Mineola, Tex., in the beginning of the month due to heavy rains (over 4 inches) on May 28 and 29.

Flood-producing rains occurred over the Elm Fork and East Fork drainage basins of the Upper Trinity watershed on the night of the 13th and 14th. The heaviest precipitation occurred in the vicinity of Carrollton, Richardson, and Garland, Tex. The overnight rainfall at Richardson totaled 11.81 inches and over the basin it averaged 2.1 inches. The flood at Garland, Tex., and nearby communities was similar to the severe flash flood of the previous month at Fort Worth, Tex. The heaviest loss from this flood occurred at Garland, Tex.; damage was also severe in other communities near the center of the heaviest precipitation.

A small flood occurred on the Nueces River at Cotulla, Tex., on the 12th due to heavy local rains (5 inches in Cotulla area). No damage resulted.

Heavy thundershowers on the afternoon of the 25th over the San Antonio, Tex., area caused the Salado Creek to overflow its banks and flood the city to depths of 15 to 18 inches. Unofficial rainfall measurements of 10 to 12 inches were reported from the southeast and south sides of the city. Damage to streets in southeastern San Antonio was heavy.

Flood stages were exceeded at various points on the Rio Grande between Alamosa, Colo., and Albuquerque, N. Mex., from the 11th to the end of the month. The high water was principally due to high level snow melt with crest stages considerably increased by heavy rains over the upper basin.

Flooding occurred on the San Juan (Animas) at Durango, Colo., throughout the month.

Columbia Basin.—The waters of the Snake River below American Falls, as well as those of the Salmon and Clearwater receded gradually from near bankfull stages during the latter half of May and throughout June. Heavy snow melt at their headwaters occasioned fairly high but no over-bankfull stages on the upper Snake and Henry's Fork.

The Willamette at Portland, Oreg., and the Columbia at Vancouver, Wash., receded gradually from the crest on May 18 throughout the remainder of May and June except for slight rises on May 23 and 29, and from June 8 to 11. The flood was due to an unseasonable warm period occurring simultaneously over the upper Columbia and Snake River Basins. Precipitation was unusually deficient in April and near or slightly below normal during May. Losses due to the flood were those mostly due to erosion and the flooding of pasture lands.

FLOOD STAGE REPORT FOR JUNE 1949

[All dates in June unless otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
South Branch Potomac: Springfield, W. Va.	15	18	19	29.8	18
Potomac: Harpers Ferry, W. Va.	18	19	19	18.5	19
Washington, D. C. (Leiter gage) ..	10	20	21	13.0	20
Roanoke: Alta Vista, Va.	10	30	(?)		
Neuse: Smithfield, N. C.	13	30	(?)		
EAST GULF OF MEXICO DRAINAGE					
Pearl: Pearl River, La.	12	28	30	12.2	29
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Middle: Indianola, Iowa.	14	25	25	15.5	25
Des Moines: Eddyville, Iowa.	15	26	26	16.2	26
Ottumwa, Iowa.	9	26	26	9.2	26
See footnotes at end of table.					

See footnotes at end of table.

FLOOD STAGE REPORT FOR JUNE 1949—Continued

[All dates in June unless otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
Missouri Basin					
Nemaha: Falls City, Nebr.....	20	{ 2 28	{ 3 29	28.4 26.9	2 28
Tarkio: Fairfax, Mo.....	17	{ 2 28	{ 2 28	18.8 19.8	2 28
One Hundred and Two: Maryville, Mo.....	14	{ 1	{ 2	15.7	1
Solomon:					
Kerwin, Kans.....	13	{ 13	{ 13	13.0	13
Alton, Kans.....	12	{ 14 8	{ 14 12	16.2 27.9	14 11
Beloit, Kans.....	18	{ 14 20	{ 17 21	28.2 21.7	16 21
Niles, Kans.....	24	{ 15 20	{ 15 21	24.2 25.2	15 21
Republican:					
Norton, Kans.....	17	{ 9 18 7	{ 9 18 9	17.7 18.6 6.3	9 18 7
Cambridge, Nebr.....	5	{ 10 13 17	{ 11 13 19	5.2 5.7 7.1	11 13 17-18
Guide Rock, Nebr.....	10	{ 9 13	{ 9 13	11.7 10.0	9 13
Hardy, Nebr.....	11	{ 9 9	{ 9 9	12.7 11.5	9 9
Scandia, Kans.....	10	{ 13 9	{ 13 9	10.7 10.4	13 9
Concordia, Kans.....	10	{ 10 14	{ 11 15	18.6 16.8	10 14
Clay Center, Kans.....	15	{ 28	{ 29	17.5	28-29
Little Blue:					
		{ 9	{ 15	13.3 12.0 12.2	10 11 12
Endicott, Nebr.....	9	{ 28 29 10	{ 28 29 11	9.4 9.4 16.2	28 29 10
Hanover, Kans.....	14	{ 13 14 28	{ 13 16 29	14.4 19.0 15.5	13 15 29
Big Blue:					
Crete, Nebr.....	15	{ 10 13 21	{ 11 16 24	22.0 21.8 18.0	10 14 24
Beatrice, Nebr.....	16	{ 16	{ 16	17.9 16.8	30 16
Barnston, Nebr.....	18	{ 17 28	{ 17 29	18.1 27.8	17 28
Blue Rapids, Kans.....	20	{ 13 15 25	{ 13 16 25	23.1 23.5 25.1	13 15 25
Randolph, Kans.....	22	{ 28	{ 30	29.2 26.3	29 3
Delaware: Valley Falls, Kans.....	22	{ 3	{ 3	23.1	29
Stranger Creek: Tonganoxie, Kans.....	23	{ 25	{ 25	24.4	25
Kansas: Manhattan, Kans.....	17	{ 11 15 29	{ 11 15 30	17.4 17.3 18.1	11 15 29
Grand:					
Chillicothe, Mo.....	18	{ 2 14	{ 4 15	24.0 24.6	3 14
Sumner, Mo.....	25	{ 2 14	{ 5 17	20.9 28.9	4 15
Brunswick, Mo.....	12	{ 3 15 26	{ 6 17 30	16.6 14.7 13.9	5 16 30
Chariton: Novinger, Mo.....	19	{ 1 13 24	{ 1 16 30	20.6 23.6 20.9	1 16 29
Lamine: Clifton City, Mo.....	15	{ 6 14	{ 9 15	23.0 16.3	9 14
Blackwater: Blue Lick, Mo.....	25	{ 7	{ 14	30.6	9
Missouri:					
Rulo, Nebr.....	17	{ 2 28	{ 3 29	18.3 18.1	2 28
St. Joseph, Mo.....	17	{ 2 28	{ 3 30	17.5 17.7	3 29
Atchison, Kans.....	20	{ 2 25 29	{ 4 25 30	21.3 20.3 21.5	3 25 29
Leavenworth, Kans.....	19	{ 3 29	{ 4 30	19.8 20.2	3 29
Lexington, Mo.....	22	{ 3 15 29	{ 4 15 30	22.8 22.1 23.5	4 15 30
Waverly, Mo.....	18	{ 3 16 26	{ 16 18 27	20.3 18.8 18.8	3 15 26
Boonville, Mo.....	21	{ 5 15	{ 5 16	21.4 21.4	5 15
Hermann, Mo.....	21	{ 4 15	{ 7 17	22.7 22.6	5 16
St. Charles, Mo.....	25	{ 5 15	{ 8 18	27.7 27.2	6 17

FLOOD STAGE REPORT FOR JUNE 1949—Continued

[All dates in June unless otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM—continued					
Ohio Basin					
Barren: Bowling Green, Ky.-----	28	16	19	35.2	18
Green:					
Lock No. 6, Brownsville, Ky.-----	28	19	20	29.6	20
Lock No. 4, Woodbury, Ky.-----	33	17	22	39.1	20
Wabash: LaFayette, Ind.-----	11	27	27	11.6	27
French Broad:					
Asheville, N. C.-----	9	16	17	11.8	16
Marshall, N. C.-----	10	16	17	11.7	17
South Chickamauga Creek: Chick- amauga, Tenn.-----	10	16	16	11.6	16
Arkansas River					
Cow Creek: Lyons, Kans.-----	15	14	15	16.0	15
Cimarron: Perkins, Okla.-----	11	7 15	7 15	11.1 11.8	7 15
Deep Fork: Dewar, Okla.-----	18	May 18	20	21.7 22.8 23.1 22.6	May 19 May 22 May 25 12
North Canadian:				5.6	5
Woodward, Okla.-----	5	5 10 14	5 10 14	5.2 5.6	10 10
Canton, Okla.-----	9	1	22	9.9	19
Arkansas:					
Syracuse, Kans.-----	7	5	6	11.2	5
Garden City, Kans.-----	7	5	7	9.4	7
Dodge City, Kans.-----	10	7	9	13.3	8
Great Bend, Kans.-----	8	8	18	10.1	13
Hutchinson, Kans.-----	6	7	20	8.2	15-16
Arkansas City, Kans.-----	16	8 21	8 21	16.7 16.5	8 21
Fort Smith, Ark.-----	22	12 12 14	12 12 15	22.2 22.4	12 15
Van Buren, Ark.-----	22	12	16	23.2 23.4	12 15
Dardanelle, Ark.-----	22	16	16	22.0	16
Red Basin					
Ouachita:					
Arkadelphia, Ark.-----	17	15	16	20.4	15
Camden, Ark.-----	26	18	19	26.5	19
Little:					
Horatio, Ark.-----				30.5	15
Whitecliffs, Ark.-----	25	17	19	26.1	18
Sulphur: Hagansport, Tex.-----	38	14	15	39.8	15
Atchafalaya Basin					
Atchafalaya: Morgan City, La.-----	6	25	25	6.2	25
WEST GULF OF MEXICO DRAINAGE					
Sabine:					
Mineola, Tex.-----	14	2	5	15.8	4
Elm Fork: Carrollton, Tex.-----	6	14	15	11.1	14
East Fork: Rockwall, Tex.-----	10	14	16	14.1	14
Trinity:					
Dallas, Tex.-----	28	14	17	36.0	15
Rosser, Tex.-----	26	16	20	32.8	17
Trinidad, Tex.-----	28	18	23	37.3	21
Long Lake, Tex.-----	40	May 28	3	41.5	May 30
Liberty, Tex.-----	24	5	12	24.6	9
Nueces: Cotulla, Tex.-----	15	12	12	15.1	12
Rio Grande:					
Alamosa, Colo.-----	9	17	26	10.6	20
Lobatos Bridge, Colo.-----	4	13	(²)	7.7	21
Embudo, N. Mex.-----	8	18	(²)	12.2	22
Espanola, N. Mex.-----	7	18	29	8.1	23
Albuquerque, N. Mex.-----	4	11 19 21	11 19 26	4.2 4.4 4.6	11 19 23
GULF OF CALIFORNIA DRAINAGE					
Colorado Basin					
Eagle: Eagle, Colo.-----	5	13	20	5.1	20
Gunnison: Delta, Colo.-----	11	18	19	11.6	18
Animas: Durango, Colo.-----	4	May 23	(²)	5.5	May 28
San Juan: Farmington, N. Mex.-----	7	20	20	8.3	19
Colorado: Grand Junction, Colo.-----	11	18	21	7.2 11.6	20 19
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Coeur d'Alene Lake: Coeur d'Alene, Idaho.-----	30	May 1	May 31	34.5	May 17
Willamette: Portland, Oreg.-----	18	May 14	13	22.2	May 18
Columbia: Vancouver, Wash.-----	15	May 12	18	22.5	May 18

¹ Provisional.² Continued at end of month.